Human-Exposure-Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil

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Response: The Department of Toxic Substances control is developing recommendations for estimating contamination of indoor air due to soil gas intrusion. When these recommendations are published, OEHHA plans to meet with SWRCB, RWQCB and DTSC staff to calculate revised soil-gas-screening levels for volatile contaminants. For this reason, OEHHA does not plan to make an interim and very minor change in soil-gas-screening levels before the DTSC recommendations are published.

Other Comments

Comment 91 (EnviroCoalition): During our discussions a few years ago with Region 9 EPA on the PRGs, it was revealed that they were not really designed to be protective of children's health in most instances. In fact, this is the reason that the legislature decided not to use the PRGs as screening levels in Senator Escutia's original Brownfield's legislation. However, I note that for some chemicals, for some scenarios, that the screening numbers OEHHA has put forth are higher than Region 9 EPA's PRGs. For instance, for the residential land use scenario for soil, 12 out of 43 levels exceed the PRGs (Table 4). Can you explain to us why this would occur if these numbers were being protective of children's health in a residential scenario?

Response: Different dermal absorption factors were assumed in six of the chemicals and USEPA had different toxicity criteria for the other six. Child specific toxicity criteria were not considered by either OEHHA or USEPA because those criteria are not yet available.

Comment 92 (SC –BM): As the draft report recognizes, these screening numbers are only for human health protection and are not meant for protection of water quality or ecological health. In preparing the guidance document on how to use the screening numbers Cal/EPA should include full consideration of protecting the waters and ecology of California.

Response: This is very important and will be forwarded to the authors of the implementation document.

Comment 93 (DTSC - SD): Staff have noted to me that the soil screening numbers for the element lead reflect the use of our "leadspread" model and target the 95th percentile (not a 95% UCL) of exposed individuals. This is not consistent with the use we recommend for the model, for the child resident we specify the 99th percentile, in part because the 95th percentile excludes one out of every 20 children, and in many neighborhoods I can count over 20 kids. Using the 99th percentile for the child resident yields a soil screening level of approximately 150 ppm.

Recently, for the adult, the new USEPA adult lead model, targeting the pregnant woman, specifies a soil screening level of about 800 ppm.

Response: OEHHA finds the recommendation to protect 99 percent of the population to be reasonable. Soil screening levels for lead in Table 5 are now consistent with this recommendation. OEHHA scientists are unable to find adequate documentation on the calculation of a lead screening level of 800 mg/kg using the U.S. EPA adult lead model.

Therefore, this value is not adopted as the screening level for commercial/industrial scenarios at this time.

Appendix F. Bibliography of Risk Assessment Documents for Chemicals on the Initial List for Development of Soil-Screening Numbers.

Volatile Chemicals

Benzene

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Carbon Tetrachloride

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U.S. EPA. 1984. Health Effects Assessment for cis-1,2-Dichloroethylene. Prepared by the Office of Health and Environmental Assessment, Environmental Criteria and Assessment Office, Cincinnati, OH for the Office of Solid Waste and Emergency Response, Washington, DC.

trans-Dichloroethylene

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Xylenes

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